## ABSTRACT

A system, method, and apparatus are arranged to provide small-signal compensation in a switching regulator that includes an inductor. A zero adjustment circuit is included in the system to introduce at least one zero in the closed-loop transfer function associated with the regulator. The zero adjustment circuit is responsive to a measurement signal, which is associated with one or more measured parameters associated with the inductor. By changing the location of at least one zero in response to the measurement signal it is possible to dynamically change the compensation based on variations in the inductance of the inductor. The zero adjustment circuit may be provided as a portion of the controller block of the regulator, or as a separate feedback circuit. The zero adjustment circuit can be implemented digitally as a portion of a DSP block, or as an analog function as may be desired in a particular system.